

SEQUENCE LISTING



<110> Olwin, Bradley B.
Rosenthal, Richard S.

<120> CHIMERIC FIBROBLAST GROWTH FACTOR PROTEINS, NUCLEIC
ACID MOLECULES, AND USES THEREOF

<130> 2848-32

<140> Not Yet Assigned

<141> 1999-08-19

<150> 60/097,160

<151> 1998-08-19

<160> 27

<170> PatentIn Ver. 2.0

<210> 1

<211> 556

<212> DNA

<213> chimeric sequence

<220>

<221> CDS

<222> (8)..(553)

<400> 1

ggtagtc atg aga cag atc aag atc tgg ttt cag aac cgg cgc atg aag 49
Met Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys
1 5 10

tgg aaa aag gcg gct gct ggt tct atc act acc ctg cca gct ctg cca 97
Trp Lys Lys Ala Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro
15 20 25 30

gaa gac ggt ggt tct ggt gcc ttc cca cca ggt cac ttc aaa gac cca 145
Glu Asp Gly Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro
35 40 45

aaa cgt ctg tac tgc aaa aac ggt ggt ttc ttc ctg cgc atc cac ccc 193
Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro
50 55 60

gac ggc cga gtg gac ggg gtc cgc gag aag agc gac cca cac atc aaa 241
Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys

65	70	75	
cta caa ctt caa gca gaa gag aga ggg gtt gtg tct atc aaa gga gtg			289
Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val			
80	85	90	
tgt gca aac cgt tac ctt gct atg aaa gaa gat gga aga tta cta gct			337
Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala			
95	100	105	110
tct aaa tgt gtt aca gac gag tgt ttc ttt ttt gaa cga ttg gag tct			385
Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser			
	115	120	125
aat aac tac aat act tac cgg tca agg aaa tac acc agt tgg tat gtg			433
Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val			
	130	135	140
gca ctg aaa cga act ggg cag tat aaa ctt gga tcc aaa aca gga cct			481
Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro			
	145	150	155
ggg cag aaa gct ata ctt ttt ctt cca atg tct gct aag agc gaa cag			529
Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln			
	160	165	170
aaa ctc atc tct gaa gag gat ctg tga			556
Lys Leu Ile Ser Glu Glu Asp Leu			
175	180		

<210> 2
 <211> 182
 <212> PRT
 <213> chimeric sequence

<400> 2
 Met Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys
 1 5 10 15
 Lys Ala Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro Glu Asp
 20 25 30
 Gly Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg
 35 40 45
 Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pr Asp Gly
 50 55 60

Arg Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln
65 70 75 80

Leu Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala
85 90 95

Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys
100 105 110

Cys Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn
115 120 125

Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu
130 135 140

Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln
145 150 155 160

Lys Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln Lys Leu
165 170 175

Ile Ser Glu Glu Asp Leu
180

<210> 3
<211> 556
<212> DNA
<213> chimeric sequence

<220>
<221> CDS
<222> (11)..(553)

<400> 3
ggtagtccat atg ggc cgc aaa aaa cgc cgc cag cgc cgc cgc ccg ccg 49
Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro
1 5 10

cag gaa ttc gcg gct gct ggt tct atc act acc ctg cca gct ctg cca 97
Gln Glu Phe Ala Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro
15 20 25

gaa gac ggt ggt tct ggt gcc ttc cca cca ggt cac ttc aaa gac cca 145
Glu Asp Gly Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro
30 35 40 45

aaa cgt ctg tac tgc aaa aac ggt ggt ttc ttc ctg cgc atc cac ccc	193
Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro	
50 55 60	

gac ggc cga gtg gac ggg gtc cgc gag aag agc gac cca cac atc aaa	241
Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys	
65 70 75	

cta caa ctt caa gca gaa gag aga ggg gtt gtg tct atc aaa gga gtg	289
Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val	
80 85 90	

tgt gca aac cgt tac ctt gct atg aaa gaa gat gga aga tta cta gct	337
Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala	
95 100 105	

tct aaa tgt gtt aca gac gag tgt ttc ttt ttt gaa cga ttg gag tct	385
Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser	
110 115 120 125	

aat aac tac aat act tac cgg tca agg aaa tac acc agt tgg tat gtg	433
Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val	
130 135 140	

gca ctg aaa cga act ggg cag tat aaa ctt gga tcc aaa aca gga cct	481
Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro	
145 150 155	

ggg cag aaa gct ata ctt ttt ctt cca atg tct gct aag agc gaa cag	529
Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln	
160 165 170	

aaa ctc atc tct gaa gag gat ctg tga	556
Lys Leu Ile Ser Glu Glu Asp Leu	
175 180	

<210> 4
 <211> 181
 <212> PRT
 <213> chimeric sequence

<400> 4
Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Glu Phe
1 5 10 15

Ala Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro Glu Asp Gly
20 25 30

Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg Leu
 35 40 45

Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro Asp Gly Arg
 50 55 60

Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln Leu
 65 70 75 80

Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala Asn
 85 90 95

Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys Cys
 100 105 110

Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn Tyr
 115 120 125

Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu Lys
 130 135 140

Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln Lys
 145 150 155 160

Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln Lys Leu Ile
 165 170 175

Ser Glu Glu Asp Leu
 180

<210> 5
 <211> 146
 <212> PRT
 <213> Bos taurus

<400> 5
 Pro Ala Leu Pro Glu Asp Gly Gly Ser Gly Ala Phe Pro Pro Gly His
 1 5 10 15

Phe Lys Asp Pro Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu
 20 25 30

Arg Ile His Pro Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp
 35 40 45

Pro His Ile Lys Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser

50	55	60
Ile Lys Gly Val Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly		
65	70	75 80
Arg Leu Leu Ala Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Phe Glu		
	85	90 95
Arg Leu Glu Ser Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Ser		
	100	105 110
Ser Trp Tyr Val Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Pro		
	115	120 125
Lys Thr Gly Pro Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala		
	130	135 140

Lys Ser
145

<210> 6
<211> 146
<212> PRT
<213> Homo sapiens

<400> 6
Pro Ala Leu Pro Glu Asp Gly Gly Ser Gly Ala Phe Pro Pro Gly His
1 5 10 15
Phe Lys Asp Pro Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu
20 25 30
Arg Ile His Pro Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp
35 40 45
Pro His Ile Lys Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser
50 55 60
Ile Lys Gly Val Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly
65 70 75 80
Arg Leu Leu Ala Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Phe Glu
85 90 95
Arg Leu Glu Ser Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr
100 105 110

Ser Trp Tyr Val Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser
115 120 125

Lys Thr Gly Pro Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala
130 135 140

Lys Ser
145

<210> 7
<211> 140
<212> PRT
<213> Bos taurus

<400> 7
Phe Asn Leu Pro Leu Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys
1 5 10 15

Ser Asn Gly Gly Tyr Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp
20 25 30

Gly Thr Lys Asp Arg Ser Asp Gly His Ile Gln Leu Phe Leu Cys Ala
35 40 45

Glu Ser Ile Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Phe
50 55 60

Leu Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asp
65 70 75 80

Glu Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr
85 90 95

Tyr Ile Ser Lys Lys His Ala Glu Lys His Trp Phe Val Gly Leu Lys
100 105 110

Lys Asn Gly Arg Ser Lys Leu Glu Pro Arg Thr His Phe Gly Gln Lys
115 120 125

Ala Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp
130 135 140

<210> 8
<211> 140
<212> PRT
<213> Homo sapiens

<400> 8

Phe Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys
1 5 10 15

Ser Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Tyr Asp
20 25 30

Gly Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala
35 40 45

Glu Ser Tyr Gly Glu Tyr Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr
50 55 60

Leu Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn
65 70 75 80

Glu Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr
85 90 95

Tyr Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Tyr Gly Leu Lys
100 105 110

Lys Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys
115 120 125

Ala Ile Leu Phe Leu Pro Leu Pro Tyr Ser Ser Asp
130 135 140

<210> 9

<211> 60

<212> PRT

<213> Drosophila sp.

<400> 9

Arg Lys Arg Gly Arg Glu Thr Tyr Thr Arg Tyr Gln Thr Leu Glu Leu
1 5 10 15

Glu Lys Glu Phe His Phe Asn Arg Tyr Leu Thr Arg Arg Arg Arg Ile
20 25 30

Glu Ile Ala His Ala Leu Cys Leu Thr Glu Arg Gln Ile Lys Ile Trp
35 40 45

Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Asn
50 55 60

<210> 10
 <211> 60
 <212> PRT
 <213> Drosophila sp.

<400> 10
 Arg Lys Arg Gly Arg Gln Thr Tyr Thr Arg Tyr Gln Thr Leu Glu Leu
 1 5 10 15
 Glu Lys Glu Phe His Phe Asn Arg Tyr Leu Thr Arg Arg Arg Arg Ile
 20 25 30
 Glu Ile Ala Tyr Ala Leu Cys Leu Thr Gln Arg Gln Ile Lys Ile Trp
 35 40 45
 Phe Ala Asn Arg Arg Met Lys Trp Lys Lys Glu Asn
 50 55 60

<210> 11
 <211> 60
 <212> PRT
 <213> Drosophila sp.

<400> 11
 Arg Lys Arg Gly Arg Gln Thr Tyr Thr Arg Tyr Gln Thr Leu Glu Leu
 1 5 10 15
 Glu Lys Glu Phe His Phe Asn Arg Tyr Leu Thr Arg Arg Arg Arg Ile
 20 25 30
 Glu Ile Ala His Ala Leu Cys Pro Pro Glu Arg Gln Ile Lys Ile Trp
 35 40 45
 Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Asn
 50 55 60

<210> 12
 <211> 16
 <212> PRT
 <213> Drosophila sp.

<400> 12
 Arg Gln Ile Lys Ile Trp Phe Pro Asn Arg Arg Met Lys Trp Lys Lys
 1 5 10 15

<210> 13
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 13
Arg Gln Pro Lys Ile Trp Phe Pro Asn Arg Arg Lys Pro Trp Lys Lys
1 5 10 15

<210> 14
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 14
Arg Gln Ile Lys Ile Trp Phe Gln Asn Met Arg Arg Lys Trp Lys Lys
1 5 10 15

<210> 15
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 15
Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Arg Trp Arg Arg
1 5 10 15

<210> 16
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 16
Arg Arg Trp Arg Arg Trp Trp Arg Arg Trp Trp Arg Arg Trp Arg Arg
1 5 10 15

<210> 17
<211> 86
<212> PRT
<213> Human immunodeficiency virus

<400> 17
Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser

1	5	10	15												
Gln	Pro	Lys	Thr	Ala	Cys	Thr	Asn	Cys	Tyr	Cys	Lys	Lys	Cys	Cys	Phe
			20					25					30		
His	Cys	Gln	Val	Cys	Phe	Ile	Thr	Lys	Ala	Leu	Gly	Ile	Ser	Tyr	Gly
		35					40					45			
Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Pro	Pro	Gln	Gly	Ser	Gln	Thr
	50					55					60				
His	Gln	Val	Ser	Leu	Ser	Lys	Gln	Pro	Thr	Ser	Gln	Ser	Arg	Gly	Asp
65					70					75					80
Pro	Thr	Gly	Pro	Lys	Glu										
				85											

<210> 18
 <211> 60
 <212> DNA
 <213> primer

<220>
 <221> CDS
 <222> (1)..(48)

<400> 18	
cca atg tct gct aag agc gaa cag aaa ctc atc tct gaa gag gat ctg	48
Pro Met Ser Ala Lys Ser Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu	
1 5 10 15	
tgaaagcttg gg	60

<210> 19
 <211> 16
 <212> PRT
 <213> primer

<400> 19	
Pro Met Ser Ala Lys Ser Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu	
1 5 10 15	

<210> 20
 <211> 60
 <212> DNA

<213> primer

<400> 20

cccaagcttt cacagatcct cttcagagat gagtttttcg ctgctcttag cagacattgg 60

<210> 21

<211> 59

<212> DNA

<213> primer

<220>

<221> CDS

<222> (11)..(58)

<400> 21

ggtagtccat atg ggc cgc aaa aaa cgc cgc cag cgc cgc cgc ccg ccg 49

Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro

1

5

10

cag gaa ttc c

59

Gln Glu Phe

15

<210> 22

<211> 16

<212> PRT

<213> primer

<400> 22

Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Glu Phe

1

5

10

15

<210> 23

<211> 16

<212> DNA

<213> primer

<400> 23

ggaattcctg cggcgg

16

<210> 24

<211> 25

<212> DNA

<213> primer

<220>

<221> CDS

<222> (2)..(25)

<400> 24

g gaa ttc gcg gct gct ggt tct atc

25

Glu Phe Ala Ala Ala Gly Ser Ile

1

5

<210> 25

<211> 8

<212> PRT

<213> primer

<400> 25

Glu Phe Ala Ala Ala Gly Ser Ile

1

5

<210> 26

<211> 81

<212> DNA

<213> primer

<220>

<221> CDS

<222> (11)..(79)

<400> 26

ggtagtccat atg aga cag atc aag atc tgg ttt cag aac cgg cgc atg

49

Met Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met

1

5

10

aag tgg aaa aag gcg gct gct ggt tct atc ac

81

Lys Trp Lys Lys Ala Ala Ala Gly Ser Ile

15

20

<210> 27

<211> 23

<212> PRT

<213> primer

<400> 27

Met Arg Gln Il Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys

1

5

10

15

Lys Ala Ala Ala Gly Ser Ile

20